

**Greater Sandhill Crane Module  
for the  
Timber Harvest Review Component**

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Northern California – North Coast Region  
Interior Timberland Planning Team**

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**Resource Issue**

In the Pacific states, the greater sandhill crane (GSC) population was reduced in the late 1800's and early 1900's (Littlefield and Thompson 1979). Habitat destruction and unlimited hunting during and after settlement were major causes for the decline. Dawson (1923) reported that probably not more than six breeding pairs were left in California and others stated that the subspecies was rapidly disappearing from Oregon as well (Gabrielson and Jewett 1940).

The GSC breeds primarily in the northeastern portion of California and winters in the Sacramento and San Joaquin valleys. They typically construct nests in secluded sites within larger wet meadows, marshlands or occasionally in short grass prairies (Cogswell 1977, cited by Zeiner et al. 1990). However, pairs have been observed during the breeding season within relatively small, isolated wet meadows and marshes. During an extensive survey conducted in 2000, most nests were observed in conventional marsh or meadow vegetation, although several were found on sparsely vegetated man-made islands (Ivey and Herziger 2001). Nests discovered in dry habitats often consist of depressions lined with grasses, and in more typical habitat nests form large mounds of marsh plants, grasses, and reeds in shallow water. Breeding pairs may use the same nest site repeatedly and may defend the same territory in successive years (Johnsgard 1975, cited by Zeiner et al. 1990).

Courtship for GSCs begins in April with peak breeding occurring from May through July (Zeiner et al. 1990). Pairs are usually established by March 25 and birds typically complete incubation by June 15 (Littlefield 1989). Incubation lasts for approximately 30 days and the young cranes are able to fly at about 70 days of age and may remain with the adults for up to a year.

In Oregon and California, of the 1,223 GSC breeding pairs recorded in 1986 and 1988, 878 (72%) were on private land, 345 (28%) were on public land (Littlefield et al. 1994). The 2000 GSC survey showed an increase of 68% from the statewide survey in 1988; however, numbers at some sites decreased. Results from the 2000 survey showed a GSC pair distribution of 63% on private land and 37% on public land (Ivey and Herziger 2001). Since the majority of GSC locations are on private lands it is imperative that private landowners are involved in the protection and management of this species.

Littlefield et al. (1994) found breeding GSCs at 58 sites in six counties (Lassen, Modoc, Plumas, Shasta, Sierra, and Siskiyou) in California. Modoc, Lassen, and Siskiyou counties accounted for nearly 97% of these locations. During the 2000 survey, GSC pairs were found at 127 sites in the same six counties, also with Modoc, Lassen, and Siskiyou counties representing a preponderance of the locations (Ivey and Herziger 2001). During both studies Modoc county represented a majority of the locations.

Timber harvest activities occurring during the breeding season can significantly disrupt nesting cranes and result in take. They are most sensitive to disturbance during courtship, incubation, and when fledglings are young. Disturbance during the courtship period may cause abandonment of nest territories and activities which flush an adult from the nest during incubation may result in nest abandonment or the death of embryos. Activities which separate young cranes from adults can increase their risk of mortality due to predation or exposure. Potential impacts to cranes from THPs are primarily due to disturbance from hauling on appurtenant roads and operations in adjacent timber stands.

The GSC is protected by the Federal Migratory Bird Treaty Act of 1918 in the United States, by the Migratory Birds Convention Act in Canada, and various state and provincial laws. Declines of breeding GSCs in portions of their range and breeding habitat losses in both Oregon and California resulted in the population being classified by the U.S. Fish and Wildlife Service, Region 1, as a Sensitive Species in 1982, a California threatened species in 1983, and an Oregon sensitive species in 1989. California also listed the GSC as a Fully Protected Species. The take of the fully protected and State-listed threatened GSC is prohibited per Fish and Game Code sections 2080 and 3511. Also, THPs that may result in take must not be approved by the California Department of Forestry and Fire Protection (Forest Practice Rule Section 898.2(d)). Significant impacts to GSCs or their habitat is a significant effect on the environment (California Environmental Quality Act, Title 14, California Code of Regulations (CEQA Guidelines), Section 15065) as defined in CEQA Guideline Section 15382, and must be mitigated. Therefore, the Team consults on any THP which may result in take of or potential significant impacts to GSC or their habitat.

## **Goal**

- Ensure that GSCs and their required habitats are adequately protected through the review of Timber Harvesting Plans (THPs)

## Objectives

- Review THPs to determine if breeding GSC habitat occurs in the THP area and are identified and appropriate protection measures are in place
- Conduct active and post-harvest monitoring to determine if GSC protection measures are implemented during timber operations
- Continue to acquire information on the response of GSC to various management operations

## Strategic Plan

Current staffing does not permit DFG to field review all THPs for occurrences of breeding GSCs. During first review all THPs are screened for potential occurrences of GSCs using the Natural Diversity Database (NDDB). Other resources such as the results of the 2000 GSC survey in California are also used to locate GSC pairs which may not be in the NDDB.

For any project having the potential to result in direct or indirect take (as defined in Fish and Game Code Section 86) to GSCs, a consultation must be completed. Newly proposed and/or amended projects must contain sufficient information in the plan to allow lead, responsible, and trustee agencies to assess the significance of any potential impacts, and to evaluate the adequacy of proposed protection measures.

A consultation will be necessary if any of the following conditions exist:

- Breeding GSCs are known to occur within 0.5 mile of the plan.
- The standard protection measures for GSCs have not been adopted.
- GSCs are discovered during active timber harvest operations during the breeding season.

### Standard Protection Measures

The conditions on each THP are unique and protection measures may vary as situations change from plan to plan. However, standard protection measures are used as a base for each THP reviewed or consulted. The following are the standard protection measures:

1. Prior to commencing timber operations, potential GSC breeding habitat within 0.5 mile of the THP boundary shall be delineated by a person knowledgeable in GSC biology.
2. In any year under the THP in which operations will occur on or adjacent to potential crane breeding habitat during the critical breeding season (March 1- August 1), GSC surveys shall be conducted by qualified persons acceptable to DFG using guidance provided by Littlefield (1995).
3. If GSC breeding behavior is observed (i.e., courtship displays or nest building) or if a nest site is discovered, no operations shall take place within 0.5 mile in a line of sight to the birds prior to August 1 or until young have fledged, whichever is later. Care shall be taken by surveyors not to

disturb GSCs or their nest site.

4. Operations may occur up to 0.25 mile from nesting GSCs if screening (trees or topography) is present and the behavior of the adult GSCs and their young is monitored by a qualified person acceptable to the DFG. If nesting GSCs exhibit signs of disturbance (flush from the nest, alarm vocalizations, etc.) operations shall immediately cease in this area. No further operations shall occur within 0.5 mile during the nesting season without consultation and concurrence by the DFG. DFG shall be notified in writing within five working days describing such an incident including the date, time, location, and circumstances of the event.
5. For GSCs located during surveys, a Natural Diversity Database form shall be completed and sent to the DFG at 601 Locust St, Redding, CA 96001.

## **Monitoring**

Monitoring will be an important component of THP review and will include active and post-harvest inspections, and might include both implementation monitoring and effectiveness monitoring. Implementation monitoring in the field is essential, as it will determine whether companies are actually implementing the protection measures specified in the THPs. Effectiveness monitoring is also important to determine the efficacy of the prescribed protection measures.

## **Adaptive Management**

Adaptive management is important to the long-term effectiveness of GSC protection during timber operations. In general, not enough is known about the responses of GSCs to specific timber operations. Because of this, the protection measures for GSCs should be designed with the flexibility of being updated whenever new data becomes available. Effectiveness monitoring results should be evaluated and, if necessary, used as the basis for developing improved mitigation measures. These evaluations will permit incorporation of necessary revisions into future plans and ensure that appropriate updates to the protection measures for GSCs are included.

## **Measures of Success**

Success will be measured by the extent to which the following objectives are met:

- Increased frequency in which initially-submitted THPs identify breeding GSCs and include standard protection measures for GSCs
- Increased frequency of GSC pre-consultations with DFG to reduce THP review time for both DFG and timber companies
- Execution of active and post-harvest monitoring aimed specifically at detecting the implementation and effectiveness of the standard protection measures

## References

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